

A Traditional Settlement in a Modernized City: Yanbu, Saudi Arabia

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Abstract—Transition in the urban configuration of Arab cities has never been as radical and visible as it has been since the turn of the last century. The emergence of new cities near historical settlements of Arabia has spawned a series of developments in and around the old city precincts. New developments are based on advanced technology and conform to globally prevalent standards of city planning, superseding the vernacular arrangements based on traditional norms that guided so-called ‘city planning’. Evidence to this fact are the extant Arab buildings present at the urban core of modern cities, which inform us about intricate spatial organization. Organization that subscribed to multiple norms such as, satisfying gender segregation and socialization, economic sustainability, and ensuring security and environmental coherence etc., within settlement compounds. Several participating factors achieved harmony in such an inclusive city—an organization that was challenged and apparently replaced by the new planning order in the face of growing needs of globalized, economy-centric and high-tech models of development. Communities found it difficult to acclimatize with the new western planning models that were implemented at a very large scale throughout the Kingdom, which later experienced spatial restructuring to suit users’ needs. A closer look the ancient city of Yanbu, now flanked with such new developments, allows us to differentiate and track the beginnings of this unprecedented transition in settlement formations. This paper aims to elaborate the Arabian context offered to both the ‘traditional’ and ‘modern’ planning approaches, in order to understand challenges and solutions offered by both at different times. In the process it will also establish the inconsistencies and conflicts that arose with the shift in planning paradigm, from traditional-‘cultural norms’, to modern-‘physical planning’, in the Arabian context. Thus, by distinguishing the two divergent planning philosophies, their impact of the Arabian morphology, relevance to lifestyle and suitability to the biophysical environment, it concludes with a perspective on sustainability particularly for in case of Yanbu.

Keywords—Yanbu, traditional architecture, Hijaz, coral building, Saudi Arabia.

I. INTRODUCTION

HISTORY, ancient and modern, has played a role in development of Yanbu. Yanbu Industrial City, YIC, or Yanbu al-Sinaiyah is closely related to Yanbu Al-Bahr which was established before the Roman period and constituted for some past centuries a famous station on the convoys road that had been used by traders in their journeys from and to the Arabian Peninsula. Yanbu Al-Bahr Port was until a short time ago a pivotal path for pilgrims to and from the holy areas in Mecca and Medina [1].

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The above marketing passage informs us about the active and implicit objectives of the Royal Commission, which constructed YIC towards diversifying the economy with a somewhat cursory reference to the fate of old Yanbu, which, as a whole, has undergone significant changes in its spatial dynamics. This change was so pronounced that it began to be reflected in all aspects including city morphology.

Arab settlements have been experiencing a continual structural change on a massive scale, which is vividly apparent nowadays, the seeds for which were sown during the time of oil discovery in 1934 and the political unification period (1900-1940), and later on a much larger scale during the "oil shock" in the early 1970s [2]. The pre-industrial social, economic and physical environment of settlements, as compared to the contemporary, suggests a marked shift in the tradition of place making.

The discovery of oil in Saudi Arabia in 1934 invited technologically advanced settlements that were very different in their living patterns, to help encash the large reserves of this resource. Domestic facilitation for the installation of oil industries and supporting infrastructure paved way for the new concept of pre-planned city conducive to industrial setups. ARAMCO (Arab America Oil Company) began to develop bases for commercial production of oil, initially in Dhahran and Al-khobar, and later on a larger scale across many settlements, mainly on east and west coasts [3]. Such exclusive industrial camps (as were referred in earlier phases of development) aligned exclusively to economic structuring that is asymmetrically tilted towards commerce and profitability. It generated huge urban pressure on the traditional settlements nearby, thereby creating contrasts. Cetin and others have identified such contrasts in the Arab contemporary urban environment as,

“... of human & monumental scale, horizontal & vertical forms, walled & open settlements, luxurious and dilapidated buildings right next to each other in the morphology of Arab cities” [2].

Traditional organic settlements of Arabia did remotely appeal to Western planners; in fact, they received them as unorganized and uncondusive to new industrial developments, requiring urgent overhaul, and therefore unwelcome anywhere near the industrial establishments. Planned industrial estates with distinct shapes were a new spectacle for the Arabs. They became a defining statement for urbanity, and also received imperial approbation.

In an attempt to diversify its economy, Saudi Arabia ventured into the services and manufacturing sectors in the early 1970s. It proposed many new projects – two forerunner

projects were large industrial towns along its west and east coast of the Red Sea and the Arabian Gulf. Remote settlements of Yanbu Al Bahr and Al Jubayl were chosen, as they occupy strategic port locations on the west and east coast, respectively.

Looking from the perspective of Yanbu, the impacts of modern planning are well explained. Near to the old commercial port of Yanbu Al Bahr, the industrial city of Yanbu Al Sinaiyah was built. Together with Yanbu Al Nakheel-the agricultural tract, the three settlements patterns best demonstrate the intentions for economic diversity of the Kingdom and also the changing urban pattern (Fig. 1). Demographic flux at Al Sinaiyah spilled over to Al Bahr creating new city extents, and urban pressure. The latter,

coupled with negligence, has led to deterioration of old city areas, delinking the society with its building traditions (Fig. 2). It is here, to suggest that necessary as they were, this transition need not have to be so brisk, compensating for the traditional character and diversity completely (something that locals connected with); and that old models had much more to offer than was learnt from it. Besides exterior forms and intricate motifs, it offered more accessibility to its population despite its non-institutional structure, justified diversity, was humane, maintained unity and human development. In the face of rising scale and homogeneity, the study of such a traditional system thus, can essentially be of any merit, only for its principals rather than its immediate forms [4].



Fig. 1 The location of historic area relative to Yanbu Industrial City [1]

The installations were developed and perfected in the Western context. Challenges of urbanization were universally experienced and modern planning was indiscriminately applied as solutions to meet international progress. Large-scale developments were sometimes referred by the fad phrase, 'urbanism beyond architecture' that suggested unprecedented challenges of scale and complexity that the profession of Architecture could not handle [5]. New institutions and executive hierarchy were created to control the city's rising inhuman proportions and complexity. City planning, formerly an architectural undertaking, was differentiated into a separate profession through continuous assertions of its applicability. Doxiadis named it as the age of great architectural confusion where architects were in-between the roles of a designer, builder or planner. On the other hand, the cities of Saudi Arabia were set in a very different historical, physical, social and political landscape. Their arrangement came from an informal process but thoroughly invested with a multitude of reasons for its morphology, yet at the same time the process was not institutionalized. It was fundamentally organic, based upon collective decision and tacit acceptability. Rudofsky demonstrated this aspect through his exhibition 'Architecture without Architects' [6]. It is thus incumbent for this research to learn from the history of modern planning and experiences as faced in Saudi Arabia. It will help us to understand its impacts and opt for a sustainable road ahead.



Fig. 2 Photographs showing the current physical conditions of Old Yanbu

II. YANBU, ONE OF MANY TRADITIONAL SETTLEMENTS OF SAUDI ARABIA

Yanbu has now grown to become a major industrial city of Arabia, but until early 1970s (pre-industrialization), it was a modest settlement. Owing to its location along the Red Sea coast in the Tuhama plains of the Hijaz Region, it received pilgrims for Hajj and served as a hub for commerce with Turkey, Egypt, India, etc. It became a major port in lieu of the shifting of the port from Al Jar, which was destroyed by the armies of Emir "Khayer Bey al-Ghouri" in 1511 AD. Besides being involved in trade activities, its population also engaged in fishing and farming. Agricultural lands at Yanbu Al Nakheel were famous for farming dates and other crops. For the natives, known as Yambawys, Yanbu Al Bahr was only a colony to this blessed countryside [7].

The town has a medieval-picturesque-character; endowed with a favourable setting to source a settlement, such as natural protection, water, agriculture and stone for shelter. The breeze from the Red Sea moderates the temperatures, while mountains of Hijaz in the north contain them to release rare precipitation. Politically, the Yanbu governorate has a tripartite structure formed by Yanbu Al Nakhl-the plantation ground, Yanbu Al Bahr-the commercial port city that privileges the governorate's capital, Al Asimah, and Yanbu Al Sinaiyah (YIC), the large industrial township. It enjoys transportation network links with important cities of the region such as Medina, Jeddah, Mecca and Badr. As much is lost to ruins of ancient Yanbu, the 'gateway to the holy land' as it was called, much inferences about its settlement pattern are hereby tallied with the remains of other settlements in the Hijazi region and with other related literature.

The historical remains of Yanbu consist of features built in the vernacular style that inform us, though in limited ways, about the planning as carried out after the advent of Islam until the early 20th century. This era is welcomed by King as a relatively unchanging one, with respect to its building styles and materials [8]. Yanbu, as all other Arabian cities, grew in immediately contextual ways to its geographic location and inherited regional features as well. King notes that the buildings of Yanbu have typical construction characteristics, as the rest of Hijaz, in so far as the use of coral (*manqabi*) for the basic material and wood (*gandal*) for reinforcing walls and roofs (Fig. 3). Other regions developed their own context-specific construction materials and methods depending essentially upon the region's natural setting. There was, therefore, indignity and relevance associated with place-making that gave a strong character to the place; the settlement of Yanbu is known as 'white city' in many travelogues due to the glaring whiteness radiated from its coral buildings.

The settlement spanned from the bay area towards the north. To sustain itself, civilians capitalized on the natural resources like coral from the reef, fishing from the sea, potable water from occasional oases formed of the rains near the Radwah Mountains, and pastoral and arable lands for cultivation and farming. It derived its economy from commerce, socio-politico structure from religion and the sense

of security from the natural defensive surroundings. The scarce remains of old Yanbu include some buildings in Haret Asoor, and the Souq Al-Lail (Al-Lail Market) [9] (Fig. 4).



Fig. 3 Examples of Yanbu's traditional buildings [8]

Architecture in Yanbu was largely provided with simplicity-exposed fossilized coral walls- and functionality- seen in its arrangement. Composed of spaces and elements that aligned with Muslim philosophy, it fulfilled the 'limited' demands of culture and climate of the indigenous. Demands that, like folds of privacy, socialization, defence and proximity to mosques, had clear ecological philosophy behind the settlement's organization; it delivered for privacy and thermal comfort simultaneously, which is, uniquely articulated in the massing of buildings and their fanciful yet functional window facades (*Ar-rawasheen*) (Fig. 5). Burton also reflected on the simple lifestyle of the natives. He noted monolithic skyline of the place, and that no prominent building, except simply furnished mosques and a defence wall, was erected. By and large, the settlement's main components comprised of the defence wall, residential districts, mosques, market, offices

and inns for the reception of merchants (*Wekala*), pilgrims and travellers. Findings have suggested that granaries, cache for the storage of weapons and provision for fuel storage (*Azzaiteya*) were also built, as and when it became a necessity [10].

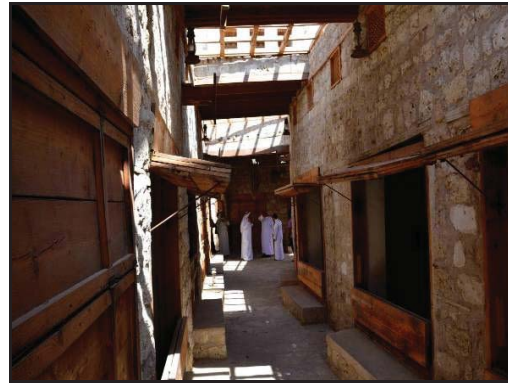


Fig. 4 Souq Al-Lail after being restored

Under the politics of tribal culture, a defensive wall with turrets was erected covering the extent of the residential districts as a whole. It accorded esteem along with security to the inhabitants (Burton notes people boasting of its strength). Moreover, it also distinguished the settlement as 'urban' for its regulated developments while fencing it from the assaults of nomadic tribes that comported different lifestyle. Eight residential districts are recognized to have existed, namely Khareek, Al Saida, Al-Quad, Al-Assor, al- Mangara, Abbas, Refaa, and al-Rabghi. Of all, only the Al-Asoor district could be realized before complete diminution.



Fig. 5 Examples of Yanbu's Rowshans

The houses that still exist bear clear spatial relationships among the decidedly separate spaces, to enable social functions within and without the family structure in-line with the Shariah - the law of the land. Spatial reservations such as, for male and female, household and none, interior and exterior etc. spaces were qualitatively integrated with the use of 'courtyard distribution', 'vertical displacement' and 'visual screening'. Houses were constructed from coral blocks with wooden courses in between to forge it higher; though heights came later as an accompaniment to advancement in building

techniques. The abundance of coral or *al-manqabi* in the area made it an obvious construction choice in the past. Its porosity contains air and moisture, while its whiteness radiates the glare, thereby insulating the house from the heat outside. Existing accounts also inform us of elements like, hanging windows (*Ar-rawasheen*), ventilators, wooden doors and supports, which were installed commonly in houses. Burton has also, categorically, noted that the houses were widely inter-spaced when placed away from the port or bazaar, where he observed a more compact arrangement; he conjectured that

location-price was the cause, whereas an alternative hypothesis could be that it was understood to give more space to the protruding windows of advancing building heights.

Open spaces in Yanbu al-Bahr, such as streets, squares, terraces and courtyards, bore direct relevance to the climate, whilst being adapted to serve the overlapping needs of the people. Streets and squares were inextricably linked with the residences and markets and urged communal activities under 'dense' symbiotic relationships- markets were placed near mosques and shops received inlets into surrounding houses, which in-turn provided shade to the users; to further protect from hot climate and retain air moisture, the market street was also shaded by palm leaves [10] (Fig. 6).

III. YANBU AS AN OLD ARABIAN SETTLEMENT: A CONCEPTUAL NOTE

It has been a conscious decision to use the word 'settlement' instead of 'city' while referring to the traditionally built-environment of Saudi Arabia. It is but pedantic, explaining the sense of how and when settlements began to be called 'cities'- planning jargon. 'City' associates with itself a service hierarchy or degree of interaction with higher and lower order cities as classified under the order of the cities in planning system. Whereas pre-modern Arabian settlements were resolutely isolated and self-sustaining organisms that did not quite orientate itself within a such planning hierarchy. Furthermore, even current cities have not yet aligned in absolute terms with this order, though they are all planned with that sense. However, right this might be, it leaves scope for another research.



Fig. 6 Layout of the outdoor spaces of old Yanbu

In his study, King has observed regional persistence for building materials in the built-environment across Arabia and especially in the Hijazi region. He has simultaneously established obvious reasons for this, stating that 'environmental coherence' has played the most essential role [8]. Burckhardt on the other hand has laid emphasis on the strict normative lifestyles of the locals, built on religious (Islamic) beliefs, such that which induced cohesion within society. Norms existed in its generality of scope and their applications were customized according the geographic location and culture. Building materials, forms and technology

varied from region to region but planning bore the same Islamic values and therefore displayed 'unity in diversity' [7].

From the above, it can be easily assumed that Yanbu's traditional architecture and city organization emerged naturally as a by-product of people's needs, rather than a pre-planned one. In this context, relation to the prevalence of Rawasheen in the Hijazi region can be made. Rawasheen, big window-openings with seating arrangements inside, were developed to capture the sea breeze while veiling the house through an intricately carved wooden screen. This feature is peculiar to Hijazi coastal areas, including Yanbu Al Bahr which experiences moderate temperature and high humidity.

Protocols for security, privacy and socialization were invariably valued in Islamic cities, making it a dynamic determinant of physical space design. These aspects have continued to 'shape' Islamic cities, though in many incarnations; one is seen in Yanbu. Arab cities are formed to achieve an introvert character, generally with courtyards; but this expression is found with variation at Yanbu, customized to its biophysical needs. Unlike the central region of Saudi Arabia, the extant residential buildings at Yanbu indicate diminishing prominence of courtyard spaces in the houses that rise up to uncommon heights of 2-3 floors. This kind of housing typology met community protocols in new ways, for instance with sprawling window (Ar rawasheen) facades on the exteriors. Similarly, under the wide array of applicability of such cultural norms, the terraces evolved naturally to assume the role of courtyards which here, reduced in sizes and prominence-a functionality based decision. It is also important to maintain that the increase of building heights can be attributed to the advancement in construction practices recently, because in the accounts of Burckhardt from 1815 A.D., he has noted the low height buildings in Yanbu [7]. In every way, it can be inferred that the 'evolution' of architectural forms was active and that vertical expansion, too, had begun improvising with the changing needs and environment. These exemplifications further confirm to the theory that it was such wide-scoped intangible norms that primarily governed traditional settlements rather than codified and parochial concepts of private spaces-an alternative notion applied in modern planning-that lead to seclusion by spaces.

Extended family relationships generated architecture of subtle divisions based on degree of consanguinity; this gradually merged public and private spaces and prevented abrupt physical expressions, except in cases of incongruent space juxtapositions. In that sense, the city met the dichotomous requirement of privacy and socialization and on a whole, appeared to be a large monolith with uniform building patterns and clear demarcations for exterior spaces.

IV. YANBU AS A SUBJECT OF MODERN PLANNING AND URBAN TRANSITION

It was only in the midst of new economic pressure and political structure that Yanbu, as other 'nodal' cities, was charged with development kinetics to cater to the local and international flux generated from homeland migration and immigration of expatriate labourers. Founding new townships

in or around the existing cities proved useful and viable. It provided facilities like accommodation to service population and socio-economic foundation. It thereby increased the urban pressure to the detriment of superannuated old-city areas. Though with beneficial objectives in mind, the Royal Commission in charge of development activities in Yanbu was unable to prevent the consequential reduction of historical precincts under huge the development thrust of the time. The movement of historic city restoration in Jeddah that had started previously, in time impacted Yanbu in later years. This occurred while Yanbu's historic city walls and old houses and mosques were torn down to pave way for infrastructure networks.

V. SUMMARY AND CONCLUSIONS

The traditionally built environment of Yanbu that features distinct urban and architectural characteristics has been tremendously affected by the construction of Yanbu Industrial City next to it. This impact is exhibited in the continuous disappearance of Yanbu's historic buildings and the domination of grid pattern of the new districts. However, recent governmental attempts to restore old Yanbu have taken place in the last few years.

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